

# Conservation

## Question Paper 1

<b>Level</b>	International A Level
<b>Subject</b>	Biology
<b>Exam Board</b>	CIE
<b>Topic</b>	Biodiversity, classification and conservation
<b>Sub Topic</b>	Conservation
<b>Booklet</b>	Theory
<b>Paper Type</b>	Question Paper 1

**Time Allowed :** 46 minutes

**Score :** / 38

**Percentage :** /100

**Grade Boundaries:**

A*	A	B	C	D	E	U
>85%	'77.5%	70%	62.5%	57.5%	45%	<45%

- 1 (a) The plant *Rafflesia arnoldii*, which grows in the jungles of South East Asia, is noted for producing the largest flower of all plants.
- The flower is reddish-brown and can grow up to one metre in diameter.
  - The flower gives off a smell similar to rotting flesh to attract flies, which then pollinate it.

Fig. 6.1 shows a flower of *R. arnoldii*.



Fig. 6.1

*R. arnoldii* is classified as an endangered species.

Suggest why *R. arnoldii* has become an endangered species.

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(b) (i) Explain the meaning of the term *biodiversity*.

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..... [1]

(ii) Suggest reasons for maintaining **plant** biodiversity.

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..... [4]

[Total: 8]

- 2 The polar bear, *Ursus maritimus*, lives in the Arctic regions of the USA, Canada, Norway and Russia. Polar bears move across the Arctic ice sheet to hunt prey such as seals.

Fig. 1.1 shows a polar bear.



Fig. 1.1

The area over which the Arctic ice sheet extends varies throughout the year.

Fig. 1.2 shows the variation in the extent of the Arctic ice sheet for the months of July to November for the years 1979 and 2009.

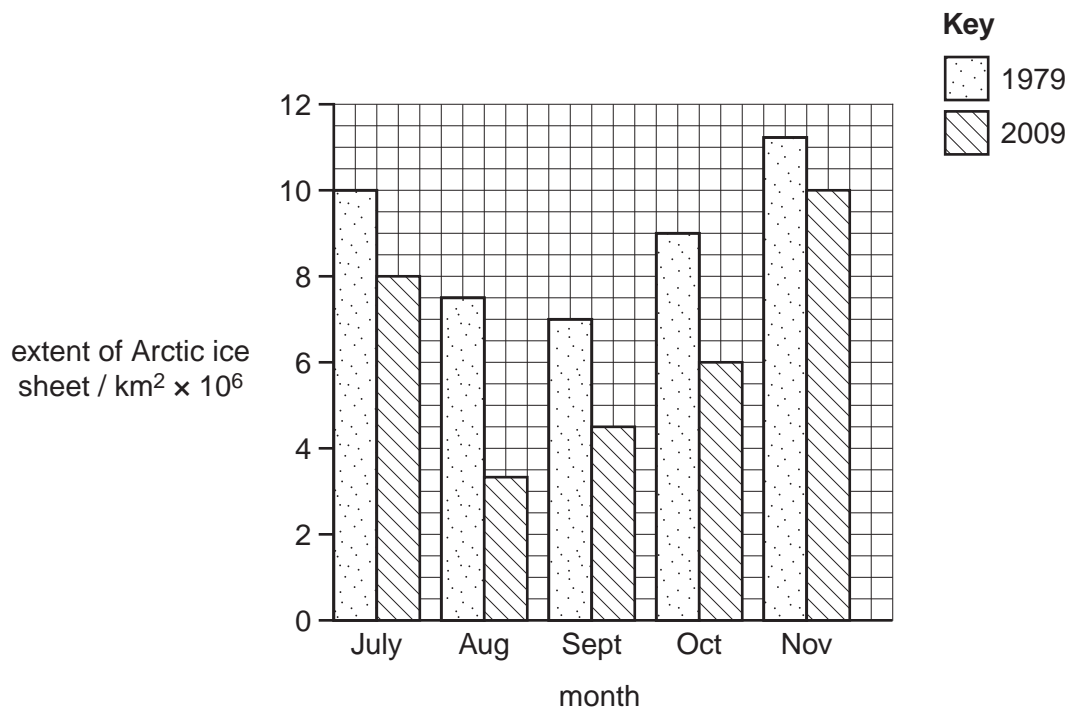


Fig. 1.2

- (a) Calculate the percentage reduction in the area over which the ice sheet extends between 1979 and 2009 **for the month of September**.

Give your answer to the **nearest whole number**.

Show your working.

answer ..... % [2]

- (b) In 2008 the government of the USA classified *U. maritimus* as an endangered species because it is under threat of extinction.

Suggest what has caused *U. maritimus* to have become endangered.

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- (c) *U. maritimus* is a eukaryote. Beneficial bacteria, which are prokaryotic cells, live in the gut of *U. maritimus*.

State three differences between the cells of *U. maritimus* and its gut bacteria.

1. ....  
2. ....  
3. .... [3]

[Total: 8]

- 3 The natterjack toad, *Bufo calamita*, is an endangered amphibian species in the UK. It comes out of hibernation in April and breeds in pools by sand dunes along parts of the UK coast. A young natterjack toad will take about 10 weeks to develop from a fertilised egg. A natterjack toad feeds at night, by running at its prey, mainly insects and worms, on the sand dunes.

Fig. 1.1 shows a natterjack toad.



Fig. 1.1

- (a) Suggest what may have caused the natterjack toad to become an endangered species in the UK.

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(b) Fig. 1.2 shows the number of adult natterjack toads counted from 1989 to 1997 in one area of the UK.

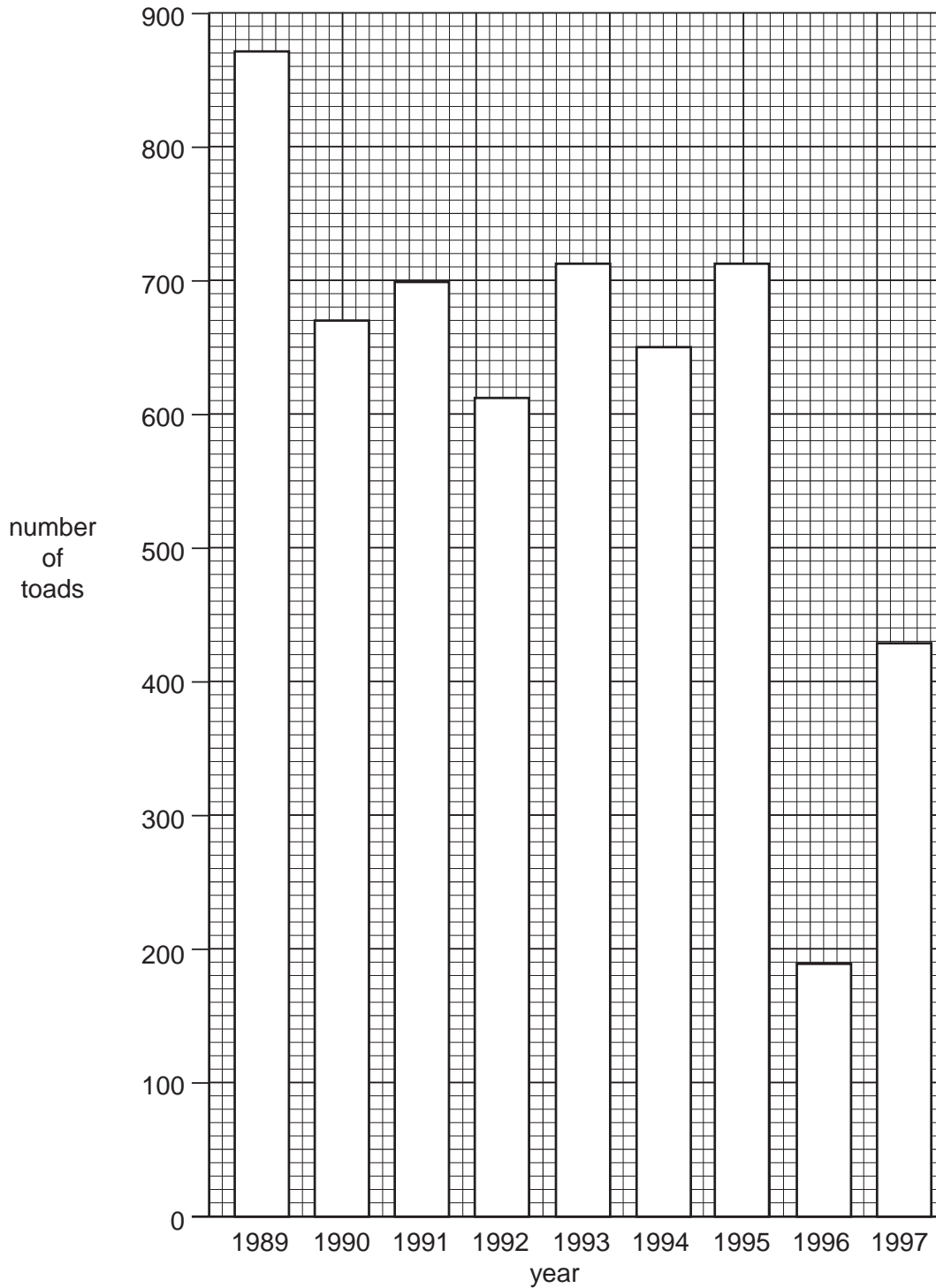


Fig. 1.2

Calculate the mean annual number of adult natterjack toads counted from 1989 to 1997.

Give your answer to the **nearest whole number**.

Show your working.

answer ..... [2]

(c) The natterjack toad is heterotrophic.

(i) Explain what is meant by heterotrophic.

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..... [2]

(ii) Name two kingdoms that are exclusively heterotrophic.

1. ....  
2. .... [1]

(d) Each year the International Union for the Conservation of Nature and Natural Resources (IUCN) publishes a list of endangered species called the Red List. The Red List has a very high proportion of vertebrates compared to invertebrates.

Suggest **one** reason **why** the Red List has many more vertebrates than invertebrates.

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[Total: 9]



- 4 The American crocodile, *Crocodylus acutus*, was classified as an endangered species by the USA in 1975. It is found in estuarine regions of southern Florida.

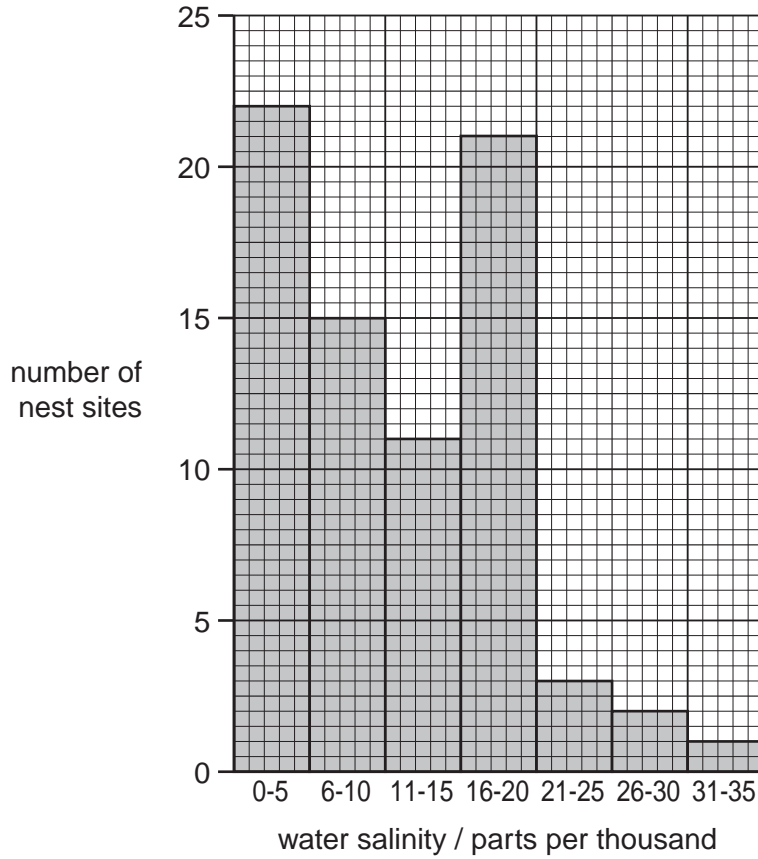
Fig. 1.1 shows an American crocodile.



**Fig. 1.1**

The salinity of the water was thought to play a part in the distribution of the American crocodile.

Fig. 1.2 shows the number of American crocodile nest sites in areas with water of varying salinity in southern Florida.



**Fig. 1.2**

**(a)** Describe the results shown in Fig. 1.2.

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[3]

**(b)** Much conservation work has been done in the Everglades National Park in Florida, which is a large wetland area. As a result the number of nest sites has increased from 8 in 1975 to 31 in 2000. This has led to a rise in the number of crocodiles.

**(i)** Calculate the percentage increase in nest sites between 1975 and 2000.

Show your working.

answer ..... % [2]

**(ii)** Suggest two reasons why the population of crocodiles in the Everglades National Park has increased.

1. ....

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2. ....

..... [2]

[Total: 7]

- 5 (a) The African elephant, *Loxodonta africana*, is a large herbivorous mammal which eats tree leaves. It has the longest gestation period of any land mammal and normally produces one offspring at a time. Its habitat is mainly savannah.

Suggest how human activities have caused the African elephant to become endangered.

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..... [3]

- (b) The meerkat, *Suricata suricatta*, also lives in the savannah of southern Africa. It is a carnivorous mammal and feeds on insects, worms, snails and other invertebrates. It grows up to 30cm in length and lives in large family groups in burrows.

Fig. 3.1 shows a meerkat.



Fig. 3.1

With reference to the information given, suggest why the meerkat is less likely than the elephant to become endangered.

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